

# Gabriele Viaggi

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## ACADEMIC POSITIONS

**University of Pisa** <https://www.dm.unipi.it/en>  
Dec 2025 - present Tenure-track researcher at the Mathematical Institute.

**University of Rome (Sapienza)** <https://www.mat.uniroma1.it/en>  
Mar 2023 - Nov 2025 Junior researcher at the Mathematical Institute.

**University of Heidelberg** [www.mathinf.uni-heidelberg.de](http://www.mathinf.uni-heidelberg.de)  
Mar 2020 - Mar 2023 Postdoc at the Mathematical Institute.  
Mentor: Prof. Beatrice Pozzetti

## EDUCATION

**University of Bonn** [www.math.uni-bonn.de](http://www.math.uni-bonn.de)  
Oct 2016 - Jan 2020 Ph.D. in Mathematics  
Advisor: Prof. Ursula Hamenstädt

Graduate school: IMPRS <https://www.mpim-bonn.mpg.de/node/78>

**Scuola Normale Superiore (SNS)** [wwweng.sns.it](http://wwweng.sns.it)  
2011 - 2016 Diploma

**University of Pisa** [www.dm.unipi.it/webnew/en](http://www.dm.unipi.it/webnew/en)  
2014 - 2016 Master degree in Mathematics, Advisor: Roberto Frigerio  
2011 - 2014 Bachelor degree in Mathematics, Advisor: Riccardo Benedetti

## PUBLICATIONS

- 2025 *Topological and geometric restrictions on hyperconvex representations*  
with James Farre and Beatrice Pozzetti  
Crelle's Journal (2025), 227-251  
<https://doi.org/10.1515/crelle-2025-0047>
- Volume, entropy, and diameter in  $SO(p, q + 1)$ -higher Teichmüller spaces*  
with Filippo Mazzoli  
Published online in Commentarii Mathematici Helvetici  
<https://doi.org/10.4171/cmh/608>
- 2024 *Divisible convex sets with properly embedded cones*  
with Pierre-Louis Blayac  
Publications Mathématiques de l'IHÉS 141 (2025), 99-189  
<https://doi.org/10.1007/s10240-024-00152-y>
- Uniform models and short curves for random 3-manifolds*  
with Peter Feller and Alessandro Sisto  
Compositio Mathematica, 161 (2025), 447-502  
<https://doi.org/10.1112/S0010437X24007565>
- 2023  $SO_0(2, n + 1)$ -maximal representations and hyperbolic surfaces  
with Filippo Mazzoli  
Memoirs of the AMS, 313 (2025)  
<https://doi.org/10.1090/memo/1587>
- Length functions in Teichmüller and anti de Sitter geometry*  
with Filippo Mazzoli  
Forum of Mathematics, Sigma 11 (2023), e101 1-37  
<https://doi.org/10.1017/fms.2023.100>
- 2022 *Small eigenvalues of random 3-manifolds*  
with Ursula Hamenstädt  
Transactions of the AMS 375 (2022), 3795-3840  
<https://doi.org/10.1090/tran/8564>
- 2021 *Volumes of random 3-manifolds*  
Journal of Topology 14 (2021), 504-537  
<https://doi.org/10.1112/topo.12190>
- 2020 *Geometry of random 3-manifolds*  
PhD Thesis, University of Bonn, 2020  
available at <https://nbn-resolving.org/urn:nbn:de:hbz:5-57316>

## PREPRINTS

2026 *Linear volume bounds for drilling and filling*  
arXiv:2508.14842

2025 *Geometric components of representation spaces via robust families of submanifolds*  
arXiv:2508.14842

*Effective length-projection bounds for hyperbolic 3-manifolds diffeomorphic to  $S \times \mathbb{R}$*   
arXiv:2504.06097

2024 *Effective hyperbolization and length bounds for Heegaard splittings*  
with Peter Feller and Alessandro Sisto, arXiv:2408.06998

*Geometry of hyperconvex representations of surface groups*  
with James Farre and Beatrice Pozzetti, arXiv:2407.20071

2023 *Hyperbolic Heegaard splittings and Dehn twists*  
with Peter Feller and Alessandro Sisto, arXiv:2304.05990

## INVITED TALKS

### Conferences

- Dec 2025 Winter Meeting in Algebra and Geometry, Rome
- Jun 2025 Workshop Low-dimensional phenomena: geometry and dynamics, IHP Paris
- Jul 2024 AMS-UMI Joint Meeting, Palermo
- Special Session on Anosov Representations and Higher Teichmüller Theory
- Apr 2024 Conference Submanifolds of locally symmetric spaces: geometric, analytic, and dynamical aspects, Autrans
- Feb 2022 Conference Spectra and Dynamics on (Locally) Symmetric Spaces, University of Paderborn
- Jun 2020 NCNGT 2020 conference, online
- Jul 2019 Arbeitstagung on Geometry, MPIM Bonn

### Seminars

- Apr 2025 Algebra and Geometry Seminar, IRMA Strasbourg University
- Dec 2024 Seminar (online), Tsinghua University
- Aug 2024 Seminar (online), Tsinghua University
- May 2024 Algebra and Geometry Seminar, Sapienza University of Rome
- Feb 2024 Geometry Seminar, Pavia
- Jan 2024 Geometry Seminar, MPIS Leipzig
- May 2023 Geometry Seminar, University of Pisa
- Apr 2023 Differential Geometry Seminar, University of Heidelberg
- Mar 2023 Geometry Seminar, University of Bologna
- Mar 2021 Geometry Seminar, University of Virginia, online
- Jun 2020 International young seminar on bounded cohomology and simplicial volume, online
- May 2020 Differential Geometry Seminar, University of Heidelberg
- Nov 2019 Séminaire de géométrie et topologie, University Pierre et Marie Curie, Paris
- Nov 2019 Séminaire de géométrie, University Paris-Est Créteil
- Nov 2019 Geometry seminar, ETH Zurich
- May 2019 Geometry seminar, LMU Munich

## ORGANIZATION

### Conferences

- September 18-25, 2022 Anosov representations  
Topic group of the NCNGT 2022 conference.  
Co-organized with Filippo Mazzoli.
- July 25-26, 2024 Developments in Hyperbolic Geometry  
Special Session of the AMS-UMI Joint Meeting.  
Co-organized with Tommaso Cremaschi and Andrew Yarmola.

### Seminars

- 2021-2023 Heidelberg Differential Geometry Seminar (co-organizer).

## TEACHING

- Winter 2025, Rome Lectures for *Geometry I* (Physics, 30 hours)  
Winter 2024, Rome Lectures for *Algebra* (Computer Science, 60 hours)  
Winter 2023, Rome Exercise classes for *Algebra* (Computer Science, 30 hours)  
Exercise classes for *Geometry* (Aerospace Engineering, 30 hours)  
Winter 2020, Heidelberg *Hyperbolic manifolds* (class, 60 hours)

## STUDENTS SUPERVISED

- Apr 2022, Heidelberg Marcel Stoklasa, Bachelor Thesis, *Limit sets for once punctured torus groups acting discretely on the Riemann sphere*  
co-supervised with Prof. Beatrice Pozzetti.

## GRANTS

- 2023, Rome Project *Aspects of modular forms, moduli problems, applications to L-values*  
with Federico Pellarin (PI), Gabriele Mondello, and Riccardo Salvati Manni.  
Fundings of the Sapienza University of Rome

## SERVICE

*Peer review* Referee or quick opinionist for Geometric and Functional Analysis, Journal of Topology, International Mathematics Research Notices, Forum Mathematics Sigma, Algebraic and Geometric Topology, Journal of the London Mathematical Society, Geometriae Dedicata, Crelle's Journal.

*Outreach* Part of the team which organized in 2022 for the University of Heidelberg a series of events about the Poincaré Conjecture in the context of the initiative of German universities to celebrate the Millenium Problems. In the project I contributed to the ideation and development of the contents of the webpage dedicated to the events.

## LANGUAGES

Italian Native  
English Fluent